Report for
Vacuum Dust Sampling of
Fabric Covered Partition Panels

25 Sigourney Street
Hartford, CT

Submitted to:

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Introduction

An employee working on the 14th floor of the building located at 25 Sigourney Street began experiencing symptoms she felt was related to the air quality. The area around the employee's desk was evaluated for possible irritant sources and the employee was questioned about any recent changes that might have caused or exacerbated her symptoms. The employee stated her symptoms worsened soon after an office and conference room were constructed in an adjacent area.

The walls of the recently constructed office and conference room on the 14th floor were constructed of fabric coated partition panels. The panels were examined and patterns similar to those found from fungal growth were noted on the fabric. These panels had been stored in the garage and exposed to outdoor weather conditions over a couple of years.

It was mentioned that partition panels similar to the ones on the 14th floor had also been used to construct an office on the 17th floor where several employees had reported symptoms they believed were related to the air quality of the building. Some of the panels used to construct the 17th floor office were purchased new and were not stored in the garage.

Hypothesis

We hypothesized that fungal growth could be present at high enough levels in the fabric covered partition panels to cause or exacerbate symptoms of sensitive occupants. Our basis for this was supported by the visible discoloration that resembled fungal colony growth on the fabric panels and the exacerbation of symptoms by an employee soon after the construction of the office and conference room adjacent to her cubicle on the 14th floor was completed.

To test our hypothesis, we proposed to collect dust samples from the fabric panels that were stored in the garage and suspected of supporting fungal growth. For comparison purposes, samples were also taken from fabric panels that were not stored in the garage. Vacuum dust samples were taken from the panels on the 14th floor and 17th floors that were stored in the garage. Vacuum dust samples were also taken from panels from areas on the 19th floor that had not been stored in the garage and used as a control.

Results

Vacuum dust samples were collected from the fabric covered partition panels located in three (3) areas. The first area was located on the 14th floor, the second area on the 17th floor, and the third areas were located on the 19th floor. All of the panels located on the 14th floor and some of the panels located on the 17th floor had been stored in the garage.

The panels for the 19th floor had been purchased new and were never stored in the garage. Three (3) vacuum samples were collected from panels in each location.

A vacuum sample was also collected from dust that had accumulated on horizontal surfaces in a 17th floor office. The employee working in the office was concerned about fungal growth on settled dust. Results for all of the vacuum dust samples are included in Appendix A.

Results for the three (3) samples collected on the panels from the 14th floor indicated high fungal spore levels. Results ranged from 3,320,000 to 7,835,556 colony forming units per gram (CFU/g) of vacuumed dust and all of the fungi cultured were Cladosporium.

Results for the three (3) samples collected on the panels from the 17th floor indicated moderate fungal spore levels. Results ranged from 8,424 to 11,652 CFU/g and seven to eight species were identified.

Results for the three (3) samples collected on the panels from the 19th floor indicated moderate fungal spore levels. Results ranged from 12,727 to 33,547 CFU/g and three to eight species were identified.

The vacuum dust sample (Sample No. 7) collected on the 17th floor office was analyzed for fungal spores. The sample was comprised of dust that had accumulated on horizontal surfaces. Results were higher than expected and Penicillium was the predominant fungal genus identified.

Recommendations

1. **Remove the fabric covered panel partitions from the recently constructed 14th floor office and conference room and the 17th floor office.**

   The fabric panels on the 14th floor had elevated fungal spore levels. The levels are high and disturbance of the fabric panels would likely release fungal spores that could cause or exacerbate allergy symptoms for persons sensitive to mold.

   Although the fungal spore levels were not high for the 17th floor office panels, we are recommending that these panels also be removed. The panels used to construct the 17th floor office were made up of panels that were new and panels that had been stored in the garage. We did not know which panels were and the vacuum dust samples may have been taken from the newer panels.

2. **Do not store any soft porous building materials in the garage or in other areas that are exposed to relative humidity levels above 60%.**

   Soft porous building materials such as carpets, ceiling tiles, or fabric can provide nutrients for fungal growth. Exposure of these materials to moisture will provide

a good environment for fungal growth to occur. Even exposure to relative humidity levels below 60% will provide sufficient moisture but the duration of exposure would need to be over a longer period of time.

Methods

The vacuum dust sampling was conducted according to the Occupational Risk Control Services, Inc., Method No. 3. The samples were delivered overnight to an American Industrial Hygiene Association (AIHA) EMPAT accredited laboratory, P&K Microbiology Services, located in Cherry Hill, NJ.

An effort was made to provide a professional evaluation of indoor air quality exposures. It must be noted there are inherent limitations to any survey project. These limitations may be due to time constraints, operational and work practice variability, and seasonal conditions. The results of this survey are representative of conditions present on the day of the survey. Conditions or operations not evaluated, or reported on, should not be assumed to be without risk.

Appendix A

Partition Vacuum Dust Samples

Tunxis Management
25 Sigourney Street
Hartford, CT

December 1, 2000

Sample ID	Location	Fungal ID	Concentration (CFU/g)	Percentage (%)
1	Conference Room 14th Floor- West Side Wall Panel	Cladosporium	3,320,000 Total 3,320,000	100
2	Conference Room 14th Floor South Side Wall Panel	Cladosporium	7,835,556 Total 7,835,556	100
3	Conference Room 14th Floor West Side Wall Panel (outside office)	Cladosporium	4,100,000 Total 4,100,000	100
4	Armand Legault North Side Wall Panel	Alternaria Curvularia lunata Penicillium Phoma Pithomyces chartarum Rhodotorula glutinis Ulocladium botrytis Yeasts	1,081 541 1,622 1,081 1,081 2,162 541 1,081 Total 9,190	12 6 18 12 12 24 6 12
5	Armand Legault East Side Wall Panel (inside office)	Acremonium Alternaria Basidiomycetes Cladosporium Curvularia lunata Epicoccum nigrum Pithomyces chartarum sterile fungi	971 1,942 1,942 971 971 971 2,913 971 Total 11,652	8 17 17 8 8 8 25 8

Appendix A Continued

Partition Vacuum Dust Samples

Tunxis Management
25 Sigourney Street
Hartford, CT

December 1, 2000

Sample ID	Location	Fungal ID	Concentration (CFU/g)	Percentage (%)
9	Hallway outside of Room 1903 East Side of Hallway	Alternaria alternata	645	2
		Aureobasidium pullulans	1,935	6
		Cladosporium	12,258	37
		Epicoccum nigrum	645	2
		Penicillium	3,871	12
		Phoma	645	2
		Rhizopus stolonifer	645	2
		Rhodotorula glutinis	11,613	35
		yeasts	1,290	4
			Total 33,547	
10	Sandra Wilcox Room 1924 Outside of Office in Hallway	Cladosporium	3,636	29
		Penicillium	6,364	50
		Phoma	1,818	14
		sterile fungi	909	7
			Total 12,727	

CFU/g - Colony Forming Units per gram of dust

Appendix A, Continued

Partition Vacuum Dust Samples

Tunxis Management
25 Sigourney Street
Hartford, CT

December 1, 2000

Sample ID	Location	Fungal ID	Concentration (CFU/g)	Percentage (%)
6	Armand Legault East Side Wall Panel (outside office)	Aspergillus versicolor	702	8
		Chaetomium globosum	702	8
		Cladosporium	702	8
		Epicoccum nigrum	702	8
		Exophiala	702	8
		Penicillium	1,404	17
		Rhodotorula glutinis	1,404	17
		Stachybotrys chartarum	1,404	17
		sterile fungi	702	8
			Total 8,424	
7	Jim Schweppe Dust on horizontal surfaces	Acremonium	1,205	3
		Aspergillus niger	1,205	3
		Cladosporium	4,819	11
		Epicoccum nigrum	3,614	9
		Penicillium	21,687	51
		Pithomyces chartarum	2,410	6
		Rhodotorula glutinis	3,614	9
		sterile fungi	1,205	3
		yeasts	2,410	6
			Total 42,169	
8	Lounge-Room 1903 South Side Wall Panel	Alternaria alternata	606	3
		Cladosporium	13,939	74
		Fusarium	606	3
		Penicillium	3,030	16
		Yeasts	606	3
			Total 18,787	